2550

Diag. Cht. No 6156

U. S. COAST AND GEODETIC SURVEY.

O. H. Tittmann, Superintendent.

State: Oregon & Washington

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 2550

LOCALITY:

Columbia River, Head of Gady's Island to Rooster Rock

1901

CHIEF OF PARTY:

Fremont Morse

JAN.-2.1902. 00011

DESCRIPTIVE REPORT OF HYDROGRAPHIC SHEET NO. 3, COLUMBIA RIVER.

Hydrographic Sheet No. 3, Columbia River, extends from about one-fourth of a mile to the east of the eastern end of Lady's Island to near Rooster Rock, which is about one and a half miles east of Corbett's Station on the Oregon Railway and Navigation Railroad. It joins Sheet No. 2, Columbia River, on its western limit and Sheet No. 4, Columbia River, on its eastern limit. The scale is 1-10000. Survey by the Party of Fremont Morse, Assistant U. S. Coast and Geodetic Survey, during the month of August 1901.

In general the banks of the river are sand, gravel, and mud, with a short stretch of bold, rocky shore above Corbett's Station. The shores and islands are covered with cottonwood and willows, with fir and underbrush above the head of Reed Island. The greatest depth of water found on the sheet was 99 feet off Tunnel Point; the most shoal water 14 feet on the sand bar between the west end of Reed Island and the east end of Garey Island. The strength of the current varies greatly with the stage of water in the river. At the lower end of the sheet the current is approximately one to two miles per hour, and slightly less at the upper end. The tide has no appreciable influence on the current in the river at any stage. The current is strongest over and abreast of Ough Reef. The channel here is 120 metres wide with a depth of 25 feet. It is marked on the north side by a buoy and on its south side, but not at the edge of the channel, by a pile set in the sand spit which carries a red lantern at night.

The plane of reference is that established from observations by the Party of Fremont Morse, Assistant U. S. Coast and Geodetic Survey, during the year 1900, and from observations and reduction of observations by the Engineer Corps of the United States Army at Vancouver, Washington, and Locks, Oregon. The plane of reference was deduced by Mr. Fremont Morse, Assistant U. S. Coast and Geodetic Survey.

The river at the lower end of the sheet is 1700 metres wide at high water stage of the river, and 800 metres wide at low water stage. The channel makes over to the Washington shore from the head of Lady's Island until it comes abreast of station Park, where it is approximately 300 metres from shore. Abreast of station Park the channel turns to the Oregon shore and just clears the southern end of Ough Reef. From Ough Reef the channel bears to the north and is 400 metres off shore abreast of Washougal Wharf. On this stretch of the river the greatest depth of water found was 46 feet, and the most shoal in the channel 25 feet. The current runs from one to two and a half miles per hour, varying in strength with the stage of the river. Extensive flats make from the Oregon side at and below the mouth of the Sandy River. These flats are composed of gravel and coarse sand covered with snags and debris deposited by the Sandy River at high water. The Washington side of the river from between stations Upper$_2$ and Trap to and above Ough Reef and for a width from high water line of 150 to 200 metres is thickly strewn with boulders and detached rock, varying in size from very small boulders to rocks of 200 to 300 cubic feet.

Ough Reef, a quarter of a mile below the town of Washougal, makes out from the Washington shore 600 metres, with a width of 200 metres in its widest part. The current runs over this reef at a speed of from two to three miles per hour. Least depth of water found one-tenth of a foot. The bottom is rock covered with boulders and detached rock. A spar buoy marks the off-shore end of the reef. The beach above Ough Reef is composed of sand and mud. The general bottom along this reach of the river is sand and occasional hard bottom.

From abreast of Washougal the channel is parallel with and 400 metres from the Washington shore up to abreast of station Old. Here it bears to the south, crossing midway between the east end of Gary and the west end of Reed Island. After clearing the west end of Reed Island, the channel bears for the first rocky point above Corbett's Station, and is 150 metres off shore abreast of Corbett's Landing. On this stretch of the river the greatest depth of water found was 60 feet abreast of Corbett's Landing, and the most shoal 14 feet on the bar between Gary and Reed Islands. The high water width of the river at the west end of Gary Island is 1700 metres, with a width of 700 metres at low water. The widest part of the river on the sheet is at the west end of Reed Island, where the high water width is 2250 metres. The bar between Reed and Gary Islands constantly changes both in depth and location.

Gary Island Slough, on the Oregon side of the river, is between Gary Island and the Oregon shore. It extends from the Sandy River

to above station Near. Its length is approximately two and one half miles with an average width of 300 metres. The greatest depth found was 25 feet. Both ends are very shoal, three feet being the best water at the upper end, while the lower end is practically dry at extreme low water. This slough is never used by steamers.

Reed Island Slough, on the Washington side, extends from near Cottonwood Point to the east end of Reed Island, about two miles, with a width of 300 metres. Greatest depth found 23 feet. The bottom is sand or mud throughout. There are many snags and logs stranded near the upper end. The best water at the east or up river end of the slough is two and one-half feet. Steamers occasionally use this channel during the high water stages of the river, when landings at Corbett's do not have to be made. Both sides of the river are sand and mud beaches from Washougal to above Corbett's Station. Extensive sand flats, bare at low stages of water, are off Gary and Reed Islands.

Abreast of Corbett's Landing the width of the river is 1000 metres at high water and 700 metres at low water. Above Reed Island the width is 700 metres at low and 1700 metres at high water. At the east limit of the sheet the high water width is 1950 metres and the low water width 900 metres. The channel hugs the Oregon shore from Corbett's Landing to Tunnel Point and then turns toward the Washington shore, being 250 metres north of station Out at the east limit of the sheet. The current runs from one to two miles per hour on this stretch. Greatest depth of water found 98 feet; least depth in channel 24 feet.

The Oregon shore is bold with the hills and rocky bluff coming down to the water's edge. Above station Onion sand flats make out from the mouth of Latourell Creek which are bare at the lower stages of the river.

On the Washington side of the river an extensive flat makes out to and above the head of Reed Island, gradually lessenning in width until its southern end is 700 metres from the Washington shore at the east limit of the sheet.

From the head of Reed Island to Mt. Pleasant Landing above the limit of this sheet are several fish wheels, three on the Washington side of the river and three on the Oregon side. The three on the Washington and the upper one on the Oregon side extend with their leads well out beyond the high water line. These leads, or practically heavy fences, are made with piles placed a few metres apart with 2 X 4 scantling spiked on to them, spaced one inch from edge to edge. They extend from the bottom of the river to near the high water line, and at high water offer great resistance to the current. From local information, they exert no appreciable influence on the channel of the river. Above and abreast of them the channel is reported to have shifted from 500 to 600 metres toward the Oregon shore. No available information as to change of depths. At some future time it may be of sufficient interest to investigate the effect, if any, that these obstructions exert in the river channel and depths.

The bottom of the section of the river represented on this sheet is sand with the exception of Ough Reef and below it, and a

small stretch of river in the vicinity of Onion station, where it is rock and gravel.

Ough Reef, below the town of Washougal, is the only place within the limits of the sheet that is especially dangerous to navigation. It is marked by a spar buoy on the Washington side of the river. The channel here is 120 metres wide and 25 feet deep. On the sand spit on the Oregon side of the channel is a pile on which during a part of the year a red light is kept. In going into Washougal, the buoy should be well cleared before turning in. The channel over the bar between Reed and Gary Islands, from information furnished by Captain Short of the Regulator Line Steamer "Dallas City", has shoaled from approximately 40 feet to 16 feet and has shifted from 300 to 400 metres toward the Oregon shore. The river changes but little from this bar to near the upper limits of the sheet, where there is little change in the depth or location of the channel, the change here being due to the growth of the sand bar at or above Reed Island.

Parker's Landing, near station Park, is a beach landing and should not be attempted by one not familiar with the locality. This landing is the terminus of the proposed railroad from the mines back from Washougal.

Washougal: There is two and a half feet of water alongside the dock at its present location. It is proposed to extend the dock or wharf 50 feet. If this be done, there will be 15 feet of water alongside the new wharf.

Corbett's Landing: A beach landing at Corbett's Station on the Oregon Railway and Navigation Company's Railroad. The landing

at low water is on the sand spit, and during the higher stages of the river by boat and on the bank of the river.

The tide is inappreciable at high water, but at low water there is a rise and fall of three to four tenths of a foot. At no stage of the river does the tide appreciably effect the strength of the current.

The Columbia River is the waterway for the commerce of a large portion of the states of Oregon, Washington, and Idaho. Grain, hay, fruit, and other commerce being transported by steamer to Portland, Oregon, the seaport for foreign trade for this vicinity.

Between Portland and the Dalles two lines of steamers are operated. The Regulator Line runs a steamer each way daily, except Sunday, throughout the year, with an auxiliary steamer making triweekly trips between Portland and the Locks. These steamers make all way landings. The White Collar Line operates a steamer which leaves Portland running to the Dalles and returning the same day daily, except Mondays, during the tourist season. This steamer makes no landing between Portland and the Locks. During the winter this steamer makes a trip every other day each way, making all way landings.

The Washougal and La Camas Transportation Company operates a steamer between Washougal, via La Camas, to Portland and return daily, except Sunday, which makes all way landings. Numerous steamers make trips at irregular intervals. Ice rarely forms to sufficient thickness to interfere with steam navigation. There is an annual freshet during the month of June. The current in the

river at that time is very strong but does not interfere with steam navigation.

Prevailing winds are from the west, generally light. The heavy wind is from the east. During the fall and winter months this wind is prevalent and at times interferes with steam navigation. This wind carries a great deal of fine sand and dust which settle and materially enlarge the bars lower down the river. There is seldom any wind except east or west, that is up or down the river. Fogs are frequent during the fall, winter, and spring months. They are dispersed by east winds.

The Sandy River coming into the Columbia River opposite the town of Washougal carries quite a logging and railroad tie industry, but none of its traffic reaches the Columbia, as there is not sufficient water at the mouth of the Sandy to afford a way for the smallest boats.

The smoke from the burnings of clearing of lands, and forest fires during the dry season, July, August, and September, materially interfere with survey work. This smoke caused the stopping of the hydrography on several occasions.

Along the Oregon shore of the river is operated the Oregon Railway and Navigation Company, a part of the Southern Pacific Railroad System. From all railroad stations there is telegraphic and telephonic communication and a daily double mail service to all points. At Washougal there is a daily mail and telephonic communication with all points via Vancouver, Washington.

There are no aqueous growths. Wrecks when not broken up are speedily covered with sand and disappear. There is only one wreck known to be on the sheet. This is a stern wheel steamer which hit a sunken rock above Cape Horn, about four miles up the river from the east end of the sheet, and drifted down stream bringing up at the bar above Gary Island; location not definitely known. The sand has obliterated all traces of this wreck.

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